



THE WORLD TRADE CENTER  
OF NY & NJ

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Engineering Department  
Design Division

The World Trade Center  
Electrical/HVAC  
Upgrade Program

Title  
ELECTRICAL  
SUBSTATION EQUIPMENT  
TOWER ONE AND TWO

ELECTRICAL

TOWER ONE  
SUBSTATION SS-75S  
FRONT VIEW & SCHEDULES

No. Date Revision Approved

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

FISCHER D. LEAHY Jm  
Designed by Drawn by Checked by

Date FEB 10, 1995 Scale NONE

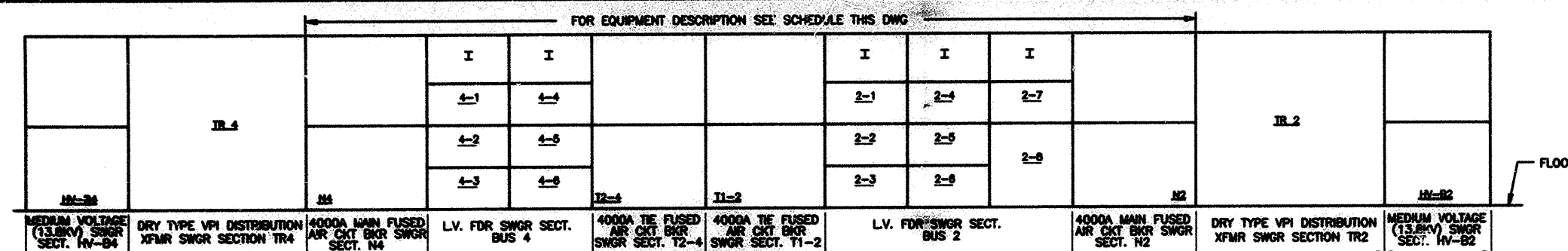
Contract Number Drawing Number

WTC-802.072A E-9

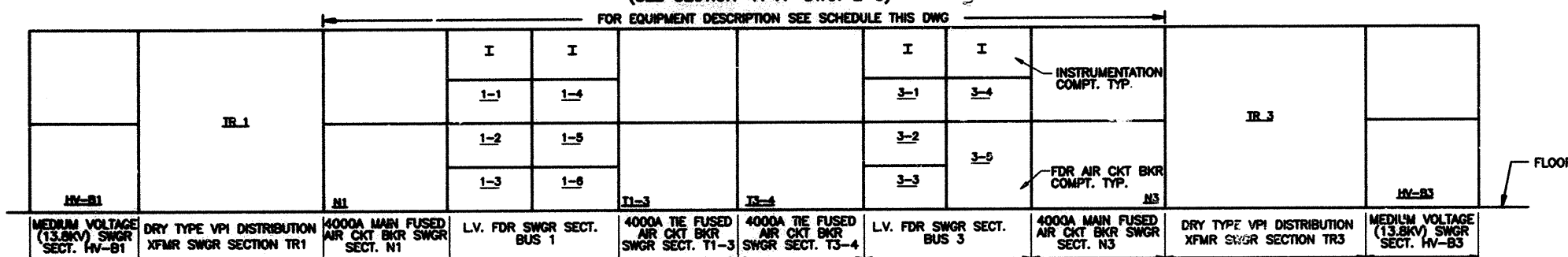
NOTES:  
1. FOR LEGEND, ABBREVIATIONS AND SUMMARY OF EQUIPMENT SEE DRAWING E-1

### SCHEDULE LEGEND

- ① FUSE - CURRENT LIMITING FUSES, SEE SPECIFICATION.
- ② SPACE - SPACE SHALL BE A FULLY EQUIPPED COMPARTMENT WITH BUS, PRIMARY & SECONDARY DISCONNECTS & CRADLE FOR DRAWOUT BREAKERS.
- ③ PROVIDE LUGS ON BREAKER AND GROUND BUS FOR CONDUCTORS SHOWN IN SCHEDULE ON THIS DRAWING.
- ④ PROVIDE LUGS ON GROUND BUS AS FOLLOWS:  
2000A FRAME = 5/8" O.D.  
1600A FRAME = 3/4" O.D.  
800A FRAME = 3/8" O.D.
- X INDICATES REQUIRED  
-- NOT REQUIRED



FRONT VIEW  
(SEE SECTION "A-A" DWG. E-3)



FRONT VIEW  
(SEE SECTION "B-B" DWG. E-3)

FOR EQUIPMENT DESCRIPTION SEE SCHEDULE THIS DWG

B-1  
B-2  
B-3  
B-4  
L.V. FDR SWGR SECT. BUS EL

FRONT VIEW  
(SEE SECTION "E-E" DWG. E-3)

### LOW VOLTAGE MAIN, TIE AND FEEDER AIR CIRCUIT BREAKERS SCHEDULE

SWITCHGEAR SECTIONS	BKR COMPT. NO.	LOAD DESCRIPTION	CIRCUIT BREAKER CHARACTERISTICS & ACCESSORIES										FEEDER		
			FRAME	TRIP	SOLID STATE TRIP UNIT					FUSE ①	DESIGNATION	CONDUIT		CONDUCTORS PER CONDUIT ③	
					L.T.	S.T.	INST.	G.F.	U.V. MONITORING & CONTROL TRIP FUNCTIONS. SEE SPECS			QTY	SIZE		
MAIN FUSED AIR CKT BKR-SWGR SECT. N1	N1	MAIN AIR CKT. BREAKER 75 S A5 N1	4000A	4000A	X	X	X	X	--	5000A	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 1	1-1	SPARE	1600A	1600A	X	X	X	X	X	2500A	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 1	1-2	(R2a) 480/277V ELEC. CLOS. "S" 77th to 84th FL	1600A	1600A	X	X	X	X	X	2500A	F-SS75R-2a	--	--	2000A BUSWAY	
LOW VOLTAGE FDR SWGR SECT. BUS 1	1-3	(R7) PONYA - 70th FL HVAC AND COMPUTER (75KVA TRANSF)	800A	400A	X	X	X	X	X	600A	F-SS75R-7	1	3 1/2" C	3-500MCM & 1 # 1/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 1	1-4	(R4) ELEVATOR BUS #EL-75S VIA TRANSFER SWITCH	1600A	1200A	X	X	X	X	--	2000A	F-SS75R-4	4	3" C	3-350MCM & 1 # 1/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 1	1-5	SPACE ②	1600A	--	--	--	--	--	--	--	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 1	1-6	PANEL #DP-75S	800A	800A	X	X	X	X	X	1200A	(1-6)	2	3 1/2" C	4-500MCM & 1 # 2/0 GND	
TIE FUSED AIR CKT BKR-SWGR SECT. T1-3	T1-3	TIE AIR CKT. BREAKER 75 S T1-3	4000A	4000A	X	X	X	X	--	4000A	--	--	--	4000A BUSWAY	
MAIN FUSED AIR CKT BKR-SWGR SECT. N2	N2	MAIN AIR CKT. BREAKER 75 S A6 N2	4000A	4000A	X	X	X	X	--	5000A	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-1	(R1) 208/120V TRANSF-ELEC. CLOS. "S" 77th to 92nd FL	1600A	800A	X	X	X	X	X	1200A	F-SS75R-1	2	3 1/2" C	3-500MCM & 1 # 2/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-2	(R2b) 480/277V ELEC. CLOS. "S" - 85th to 92nd FL	1600A	1600A	X	X	X	X	X	2500A	F-SS75R-2b	--	--	2000A BUSWAY	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-3	(R8) PONYA - ALT. FEED N.W. TRANSFER SWITCH, 70th FL	800A	400A	X	X	X	X	X	600A	F-SS75R-8	1	3 1/2" C	3-500MCM & 1 # 1/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-4	(R5) MOTOR CONTROL CENTER # MS75R	1600A	1200A	X	X	X	X	X	2000A	F-SS75R-5	3	3 1/2" C	3-500MCM & 1 # 3/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-5	SPARE	1600A	1600A	X	X	X	X	X	2500A	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-6	(R-8T) EMERG LIGHTING PANELS NORMAL SOURCE 59th to 92nd	800A	225A	X	X	X	X	--	350A	F-SS75R-BT	1	2 1/2" C	3 # 4/0 & 1 # 2 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-7	(R3) WATER SUPPLY PUMPS (2-75HP)	800A	400A	X	X	X	X	X	600A	F-SS75R-3	1	3 1/2" C	3-500MCM & 1 # 1/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 2	2-8	SPARE	2000A	2000A	X	X	X	X	X	3000A	--	--	--	--	
TIE FUSED AIR CKT BKR-SWGR SECT. T1-2	T1-2	TIE AIR CKT. BREAKER 75 S T1-2	4000A	4000A	X	X	X	X	--	4000A	--	--	--	4000A BUSWAY	
MAIN FUSED AIR CKT BKR-SWGR SECT. N3	N3	MAIN AIR CKT. BREAKER 75 S A7 N3	4000A	4000A	X	X	X	X	--	5000A	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 3	3-1	SPARE	1600A	1600A	X	X	X	X	X	2500A	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 3	3-2	(L4b) 480/277V ELEC. CLOS. "S" - 59th to 66th FL	1600A	1600A	X	X	X	X	X	2500A	F-SS75L-4b	--	--	2000A BUSWAY	
LOW VOLTAGE FDR SWGR SECT. BUS 3	3-3	SPARE	800A	800A	X	X	X	X	X	1200A	--	1	--	2#2/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 3	3-4	(R9) PONYA - 70th FLOOR, POWER	800A	400A	X	X	X	X	X	600A	F-SS75R-9	1	3 1/2" C	3-500MCM & 1 # 1/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 3	3-5	(L1) ELEVATOR DISTRIBUTION PANELS EL-A75W-B & EL-A76E-B	2000A	2000A	X	X	X	X	--	3000A	F-SS75L-1	5	3 1/2" C	3-500MCM & 1 #250MCM GND	
TIE FUSED AIR CKT BKR-SWGR SECT. T3-4	T3-4	TIE AIR CKT. BREAKER 75 S T3-4	4000A	4000A	X	X	X	X	--	4000A	--	--	--	4000A BUSWAY	
MAIN FUSED AIR CKT BKR-SWGR SECT. N4	N4	MAIN AIR CKT. BREAKER 75 S A8 N4	4000A	4000A	X	X	X	X	--	5000A	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 4	4-1	(L3) 208/120V TRANSF. ELEC. CLOS. "S" - 59th to 74th FL	1600A	800A	X	X	X	X	X	1200A	F-SS75L-3	2	3 1/2" C	3-500MCM & 1 # 2/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 4	4-2	(L4a) 480/277V - ELEC. CLOS. "S" - 67th to 74th FL	1600A	1600A	X	X	X	X	X	2500A	F-SS75L-4a	--	--	2000A BUSWAY	
LOW VOLTAGE FDR SWGR SECT. BUS 4	4-3	SPACE ②	800A	--	--	--	--	--	--	--	--	1	--	2#2/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 4	4-4	(L7) MOTOR CONTROL CENTER #MS75L	1600A	1200A	X	X	X	X	X	2000A	F-SS75L-7	3	3 1/2" C	3-500MCM & 1 # 3/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS 4	4-5	SPACE ②	1600A	--	--	--	--	--	--	--	--	--	--	--	
LOW VOLTAGE FDR SWGR SECT. BUS 4	4-6	SPARE	800A	800A	X	X	X	X	X	1200A	--	--	--	--	
TIE FUSED AIR CKT BKR-SWGR SECT. T2-4	T2-4	TIE AIR CKT. BREAKER 75 S T2-4	4000A	4000A	X	X	X	X	--	4000A	--	--	--	4000A BUSWAY	
LOW VOLTAGE FDR SWGR SECT. BUS EL	--	L.V. FDR SWGR SECT. 75 S BUS EL (INCOMING FEEDER R-4)	--	--	--	--	--	--	--	--	F-SS75R-4	4	3" C	3-350MCM & 1 # 3/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS EL	EL-1	(R10) ELEVATOR DISTRIBUTION PANEL # EL-A-568	800A	300A	X	X	X	X	--	450A	F-SS75R-10	1	2 1/2" C	3-250MCM & 1 # 2 GND	
LOW VOLTAGE FDR SWGR SECT. BUS EL	EL-2	(R11) ELEVATOR DISTRIBUTION PANEL # EL-A-638	800A	400A	X	X	X	X	--	600A	F-SS75R-11	1	3 1/2" C	3-500MCM & 1 # 1/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS EL	EL-3	(R12) ELEVATOR DISTRIBUTION PANEL # EL-A-698	800A	400A	X	X	X	X	--	800A	F-SS75R-12	1	3 1/2" C	3-500MCM & 1 # 1/0 GND	
LOW VOLTAGE FDR SWGR SECT. BUS EL	EL-4	(R13) ELEVATOR DISTRIBUTION PANEL # EL-A-768	800A	600A	X	X	X	X	--	1000A	F-SS75R-13	2	3" C	3-350MCM & 1 # 2/0 GND	